

BULK TANK ANALYSIS

Eastern Laboratory Services (ELS) offers a comprehensive range of tests to help dairy producers manage their herds by providing the most accurate, timely and cost-effective dairy diagnostic and analytical services in the industry.



What do the numbers mean?

The numbers on the charts will help you and your veterinarian interpret your bulk tank analysis report.

They can be compared to your monthly results to track the levels you are working with in your tank. All numbers are approximate. It is recommended at least three separate tank samples be considered before conclusions are reached.

If your bulk tank analysis numbers are within, or close to, the normal levels, good management procedures are probably being practiced. Bacteria are read in Colony Forming Units (CFU) per milliliter of milk. When total counts exceed approximately 10,000 CFU/ml, organisms may be present but not detected.

Type of Bacteria	Normal Levels	Moderate Levels	High Levels
	Number of colonies on plate (x100) = (CFU/ml)		
<i>Staphylococcus aureus</i>	0	100-500	>500
<i>Streptococcus agalactiae</i>	0	100-5,000	>5,000
<i>Staphylococcus species</i>	<500	500-2,000	>2,000
<i>Non-agalactiae streps</i>	<1,000	1,000-2,000	>2,000
Coliforms	<100	100-500	>500
Misc. Organisms* (<i>Pseudomonas</i> , <i>Bacillus</i> , <i>A. Pyogenes</i> , yeast, <i>Proteus</i> , Gram negative, <i>Prototheca</i> , <i>Corynebacteria</i>)	<500	500-1,000	>1,000

* Usually considered contaminants from the environment. Rarely are they a cause of mastitis.

Please note: This information is a subjective means of bulk tank culture interpretation. These numbers do not reflect the number of cows infected in the herd.

What do the different types of bacteria mean to me?

Detection and prevention techniques from Eastern Laboratory Services

Types of mastitis-causing bacteria, their source, how they infect and control methods are listed below. If your counts seem to consistently exceed the “normal” levels in any bacterial category, you may consider improving the mastitis control measures suggested. Please note that bulk tank monitoring is only one way to test milk quality.

Consult your veterinarian when treatment is recommended.

Type of Bacteria	Source	Means of Infection	Control Methods
<i>Staphylococcus aureus</i> (contagious)	Infected udder, teat lesions commonly found on udder skin which readily colonizes the teat end.	Cow-to-cow by contaminated udder wash rag, teat cups, hands or anything that comes in contact with milk from infected cows.	Milk clean, dry teats. Use separate paper towels to wash and dry. Dip teat, treat dry cows, identify and segregate infected cows and disinfect units between milking. Antibiotics are often ineffective.
<i>Streptococcus agalactiae</i> (contagious)	Infected udders. Can survive for short periods of time in environment and on hands.	Same as <i>Staph. aureus</i> .	Same as <i>Staph. aureus</i> , except antibiotics are more effective.
<i>Staphylococcus species*</i> (refers to all <i>Staph.</i> other than <i>Staph. aureus</i>)	Normal inhabitant of skin. These organisms will not turn into <i>Staph. aureus</i> .	Poor udder prep and milking wet udders and teats.	Milk clean, dry teats. Use a good teat dip and dry cow treatment.
<i>Streptococcus non-agalactiae*</i>	Multiple locations on cow: hair, lips, vagina, etc. Also found in bedding, muddy lots, feces, intestinal tracts, dirty equipment and worn rubber parts.	Environment-to-cow by wet, dirty lots and bedding, milking wet teats and poor udder prep.	Improve calving area, barn and lot sanitation. Milk clean, dry teats. Use adequately heated wash water. Often the infection is self limited.
Coliforms	Manure, bedding (especially sawdust, soil and contaminated water) and dirty equipment.	Same as <i>Strep. non-ag.</i>	Same as <i>Strep. non-ag.</i> Keep cows standing for at least 30 minutes after milking.
<i>Pseudomonas</i> , <i>Proteus</i> and Gram negative	Contaminated equipment, water, bedding or manure.	Same as <i>Strep. non-ag.</i>	Same as <i>Strep. non-ag.</i>
Yeast or Mold	Yeast normally found on cows' skin, in digestive tracts and environment. Mold is often on dirty equipment.	Same as <i>Strep. non-ag.</i>	Same as <i>Strep. non-ag.</i> Keep cows standing for at least 30 minutes after milking.
<i>Prototheca sp.</i>	Farm ponds, wet areas contaminated with feces, bedding or haylage.	Same as <i>Strep. non-ag.</i>	Treatment usually unsuccessful. Potential sources should be fenced off. Properly maintain machines to maintain healthy teat ends.
<i>Bacillus sp.</i>	Same as <i>Strep. non-ag.</i>	Same as <i>Strep. non-ag.</i>	Same as <i>Strep. non-ag.</i>
<i>Corynebacteria*</i>	Same as <i>Staph. aureus</i> .	Same as <i>Staph. aureus</i> .	Same as <i>Staph. aureus</i> .

*Studies suggest some species behave like a contagious pathogen.

Mycoplasma is not included in normal bulk tank screening. Contact ELS for mycoplasma screening information.

